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# SENSITIVE PLANTS OF THE NANTAHALA AND PISGAH NATIONAL FORESTS

NORTH CAROLINA

U.S.D.A., NAL

SEP 11 2000

Cataloging Prep



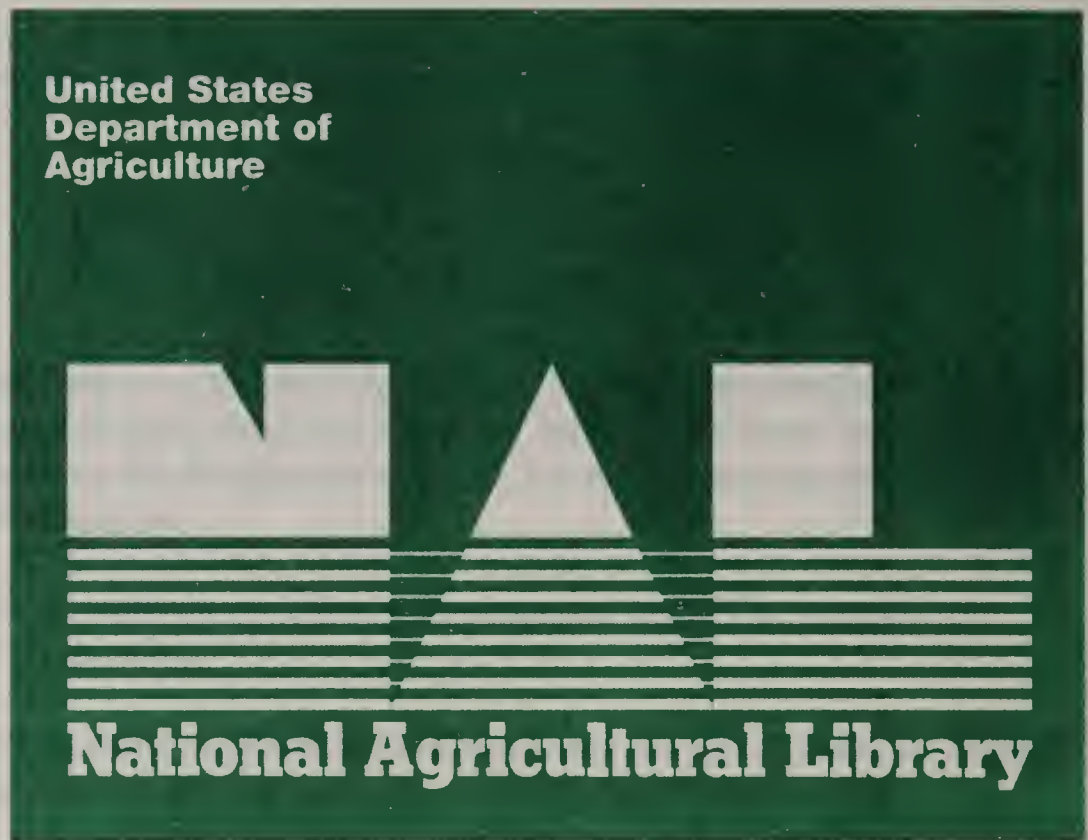


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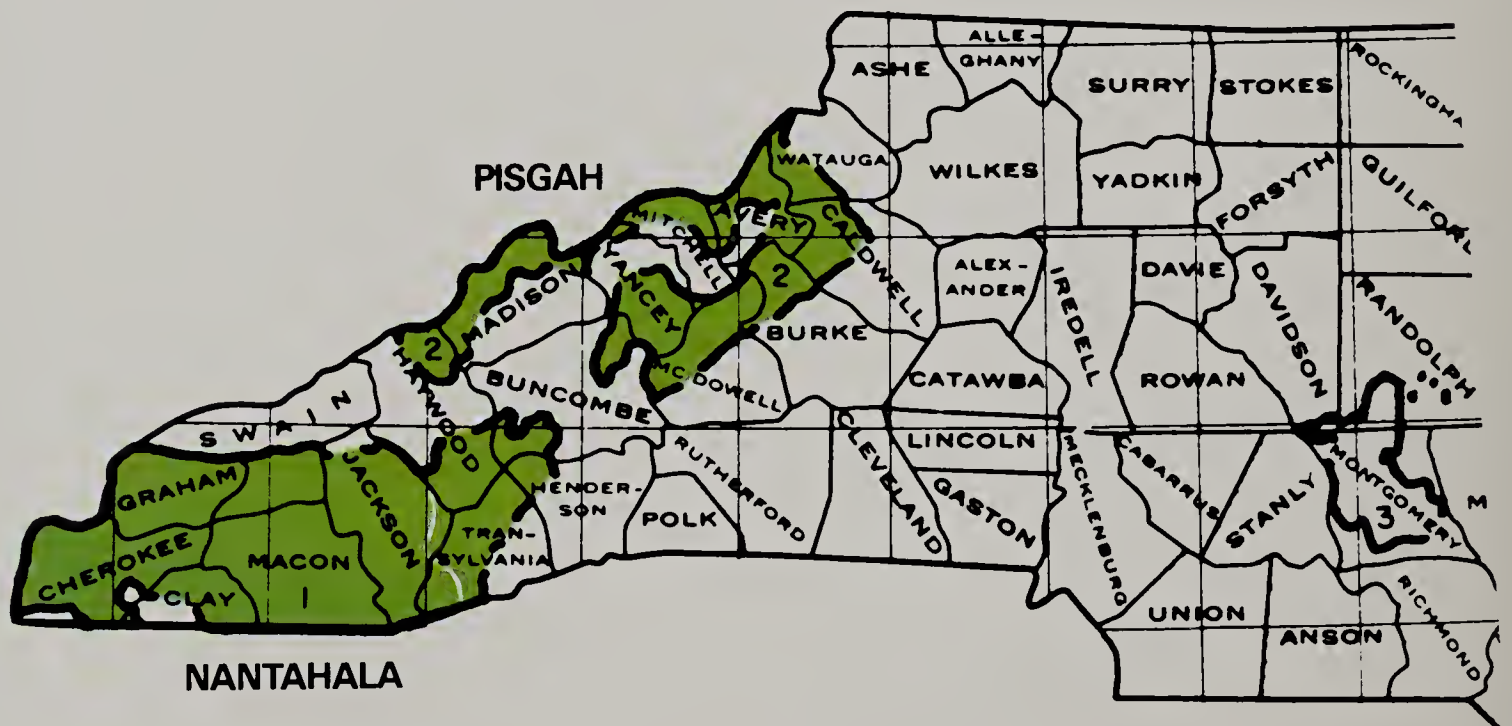
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The basis  
of threatened, endangered and sensitive species contract completed for  
the Forest Service by Dr. L.L. Gaddy, consulting biologist, Route 1, Box  
223, Walhalla, S.C. 29691.

Pictures were provided by the contractor or otherwise noted in lower right  
corner of picture.

Identifying characters include those that distinguish the species listed from  
a "look-alike" by using family, generic, species and varietal features.



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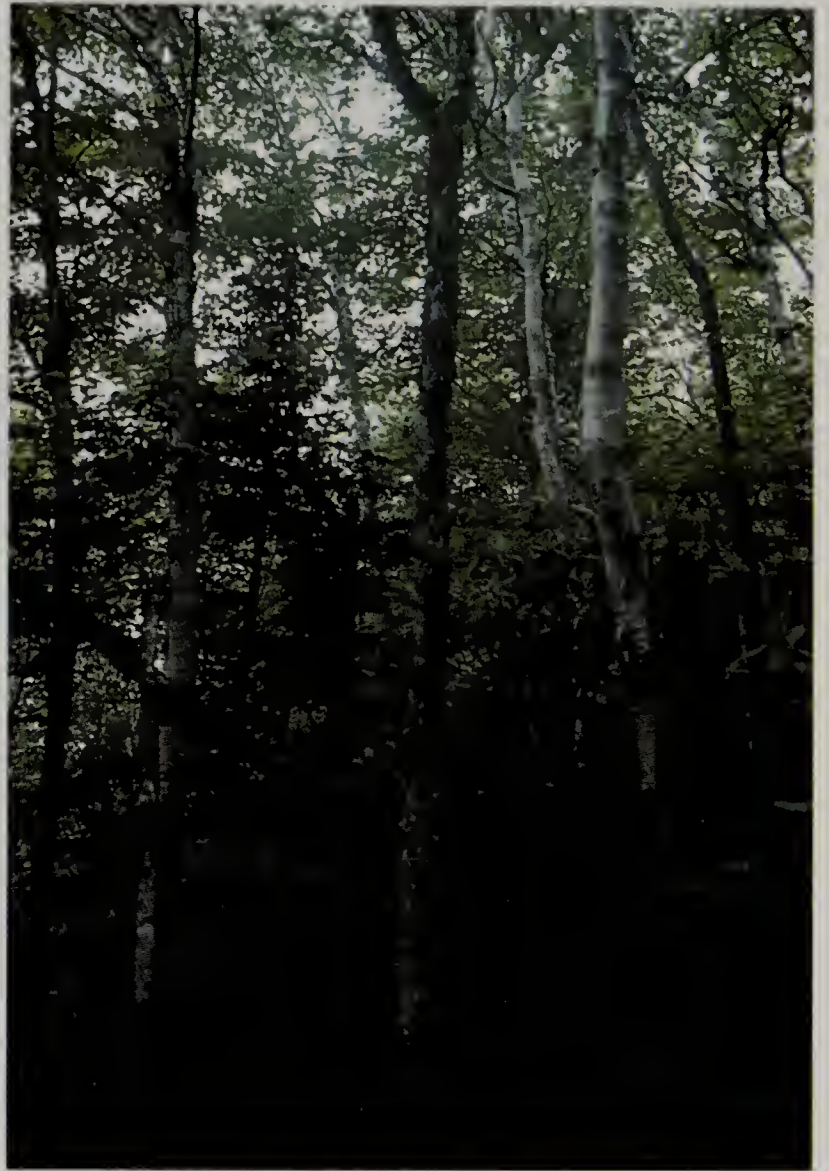
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# Mountain Paper Birch, Paper Birch

TREE



Name: Mountain Paper Birch, Paper Birch  
(*Betula papyrifera* var. *cordifolia*)

Family: Birch (Betulaceae)

Flowering Period: May to August

Fruiting Period: May to August

Habitat: Spruce-fir forests, fir forests, fire cherry-yellow birch forests and openings in the above forest types. Mountain Paper Birch is limited to north-facing sites in the above forest types where it usually invades after fire.

Identifying Characters: Mountain Paper Birch can be distinguished from the other birchs by the variety of colors seen in its bark and by the manner in which its bark peels. This is a small to medium-sized tree with gold, yellow, brown or light gray bark which peels off in large sheets. The twigs are smooth, and the leaves are heart-shaped, about 10 centimeters (ca. 4 inches) long and 8 centimeters (ca. 3 inches) wide, with hairy veins and stems. The flowers are catkins with male and female flowers found on the same tree; the fruit is a winged seed.

County: Yancey

District: Toecane — Pisgah National Forest





Name: Piratebush, Buckleya  
(*Buckleya distichophylla*)

Family: Sandalwood (Santalaceae)

Flowering Period: April to May

Fruiting Period: August

Habitat: Open, rocky woods on steep slopes, river bluffs and cliffs. Piratebush is intolerant of complete shade and cannot; therefore, survive in the shade of its hosts. Piratebush seems to prefer basic rock.

Identifying Characters: Piratebush is a shrub up to 3.3 meters (ca. 10.25 feet) tall with separate male and female plants. Piratebush cannot be mistaken for any other shrub when examined closely. Its pale green, opposite leaves and its small green flowers or larger greenish — yellow fruit on the ends of lateral branches make it distinctive. From a distance bush honeysuckle (*Diervilla sessilifolia*) looks similar; however, upon closer inspection bush honeysuckle has larger, darker green leaves, a terminal leaflet and arching stems. The flowers also differ.

Counties: Haywood, Macon and Madison

Districts: Wayah — Nantahala National Forest  
French Broad — Pisgah National Forest





Name: Fernald's Hay Sedge  
*Carex aenea*

Family: Sedge (Cyperaceae)

Flowering Period: June

Fruiting Period: June to July

Habitat: Grassy Balds

Identifying Characters: Fernald's Hay Sedge is a low-growing, grass-like herbaceous perennial from horizontal rootstocks. It has flower-bearing stems (culms) up to 7 decimeters (ca. 2.3 feet) tall with shorter leaves from 1.5 to 3 decimeters (1 foot or less) long. The tiny flowers are born in tight clusters of scales (spikes) that occur in a crowded group on the slightly flexed tip of the culm. The spikes are brownish to olive-colored when mature.

County: Mitchell

District: Toecane — Pisgah National Forest



Name: Biltmore Sedge  
(*Carex biltmoreana*)

Family: Sedge (Cyperaceae)

Flowering Period: April to May

Fruiting Period: May to June

Habitat: Shaded, partially-shaded and open soil pockets on granite — gneiss cliffs where some soil moisture (e.g., seasonal seepage) is present.

Identifying Characters: Biltmore Sedge is an erect to arching herbaceous perennial growing to 9 decimeters (ca. 3 feet) tall with leaves drooping in late summer. The stems are strongly triangular and are stout with lower sheaths not bearing leaves and upper sheaths bearing leaves up to 5 millimeters (less than .25 inch) wide. The male flowers occur in spikes 12-25 millimeters (ca. 1/2-1 inch) long, while the female flowers are found on spikes 10-20 millimeters (less than an inch) long. The seed-encapsulating sac (perigynium) is up to 3.5 millimeters (less than .25 inch) long and to 2.5 millimeters broad, with purplish scales. The rootstocks are horizontal to the surface of the ground and are from 1 millimeter to 8 millimeters thick.

County: Macon, Jackson and Transylvania

District: Highlands and Wayah — Nantahala National Forest  
Pisgah — Pisgah National Forest





Name: Broad-Leaved Tickseed, Broad-Leaved Coreopsis  
(*Coreopsis latifolia*)

Family: Aster (Asteraceae)

Flowering Period: August to September

Fruiting Period: August to September

Habitat: Open rich woods, light gaps in rich woods and road cuts through rich woods. Broad-Leaved Tickseed seems to be confined to such habitat found over basic soils.

Identifying Characters: Broad-Leaved Tickseed is an erect, perennial with long rhizomes. Its stems range from 7-15 decimeters (ca. 2-5 feet) tall with six to 10 leaf pairs below the inflorescence. This plant can be separated from other species of the Genus *Coreopsis* by its large opposite, unlobed, coarsely-toothed leaves. The inflorescence is a flat-topped arrangement of flowers, the flowers on stems from .5-3 centimeters (less than .25 inch to a little more than an inch) long.

Counties: Buncombe, McDowell

District: Grandfather, Toecane — Pisgah National Forest





Name: Robin Run-Away, False Violet, Dew-Drop, Dalibarda  
(*Dalibarda repens*)

Family: Rose (Rosaceae)

Flowering Period: June to September

Fruiting Period: June to September

Habitat: Sphagnum bogs with sunlight.

Identifying Characters: Robin Run-Away is a trailing tender evergreen plant with round to heart-shaped to kidney-shaped leaves 1.5-4 centimeters (ca. 1/2 to 1.5 inches) long with rounded notches on the margins and a heart-shaped base. The leaves are hairy on both surfaces and have stems from 2-6 centimeters (ca. .8-2.5 inches) long. Flowers are solitary on long stems with five green sepals about 3.5 millimeters (less than .17 inch) long and five white petals slightly longer than the sepals. The fruit is hard, dry, hairy and is 3-3.4 millimeters long.

County: Transylvania

District: Pisgah — Pisgah National Forest





Name: Wolf's Milk, Darlington's Spurge, Glade Spurge  
(*Euphorbia purpurea*)

Family: Spurge (Euphorbiaceae)

Flowering Period: May to August

Fruiting Period: May to August

Habitat: Rich coves, ridges with rich soil, rich low woods and seepages. On Forest Service land, all populations of wolf's milk were found on rich soils with high concentrations of bases.

Identifying Characters: A tall, stout perennial herb, 3-12 decimeters (ca. 1-4 feet) tall, with entire, elongate dark-green stem leaves. Near the top of the plant, there are kidney-shaped bractlike leaves that resemble flower petals. These leaves are yellowish-green to purplish and surround the cyathium (a type of flower). The cyathia have four lobes with a crescent-shaped gland on each lobe. The fruit of the plant is a capsule with small warts enclosing tan seeds 4-5 millimeters (less than .20 inch) long. When in flower *Euphorbia purpurea* cannot be confused with any other spurge. Its large size and its oblanceolate stem leaves make it different from other *Euphorbias*. Because there are many plants that resemble young *E. purpurea* individuals, final determination should be made only when mature plants are (flowering or fruiting) available.

County: Clay, Macon

Districts: Wayah, Tusquitee — Nantahala National Forest



Name: Bent Avens  
(*Geum geniculatum*)

Family: Rose (Rosaceae)

Flowering Period: July to August

Fruiting Period: August to September

Habitat: Wooded coves dominated by yellow birch (*Betula lutea*); grass, heath and *Alnus* bald; and in spruce-fir forests. All of these habitats are at high elevations (above 5000 feet).

Identifying Characters: Bent Avens is an erect, tall 5-7 decimeters (ca. 1.7 -2.3 feet) perennial herb with slightly angled stems that are hirsute. It has two types of leaves, basal leaves with three large divisions and stem leaves that are generally trifoliate (three-lobed). The flowers range from white to lavender, most commonly being cream or yellow. Both petals and sepals are five in number. The petals are spatulate and the pistils are longer than the sepals. The fruit occurs in aggregates 7-12 millimeters (less than .5 inch) in diameter; the individual seeds (achenes) have long, unhooked beaks that are 7-9 millimeters long. The body of the achene and the beak are both covered with long trichomes.

Counties: Mitchell, Avery

District: Toecane — Pisgah National Forest





Name: Smoky Mountain Manna Grass  
(*Glyceria nubigena*)

Family: Grass (Poaceae)

Flowering Period: June to July

Fruiting Period: June to July

Habitat: Openings in woods on moist ground, seepage areas, boggy road cuts, boggy swales, ridgetops in blackberries. All *G. nubigena* populations occur at above 4000 feet in elevation.

Identifying Characters: This grass is an erect perennial up to 14 decimeters (ca. 4.7 feet) tall. It is more robust than all over manna grasses except *G. septentrionalis*. Its leaves (blades) are without petioles, attached close to the stem (culm); they are up to 4.5 decimeters (ca. 1.5 feet) long and from 5-10 millimeters (less than .5 inch) wide. Each spikelet (group of flowers) has two to three flowers. The glume, the lower bract subtending the *spikelet*, is one-nerved, while the lemma, the lower bract subtending the *flower* is generally seven-nerved. The seed is greenish-brown and 1.5 millimeters long.

County: Graham

District: Cheoah — Nantahala National Forest





Name: White-Leaved Sunflower  
(*Helianthus glaucophyllus*)

Family: Aster (Asteraceae)

Flowering Period: July to September

Fruiting Period: July to September

Habitat: Open deciduous woods, light gaps in deciduous woods and dry road-cuts adjacent to deciduous woodlands. White-Leaved Sunflower seems to be limited to basic soils.

Identifying Characters: White-Leaved Sunflower is an erect perennial 1-2.5 meters (ca. 3-7.8 feet) tall with smooth stems and long rhizomes. This sunflower can be separated from similar plants by its small heads, 7-15 millimeters (ca. .5 inch) broad, and leaves which have white undersides. The ray flowers are 2-4 centimeters (ca. .5-1.5 inches) long and are yellow. The fruit is a brown nutlet, rounded near the tip and smooth with bristles.

Counties: Buncombe, Henderson, McDowell

Districts: Toecane, Pisgah — Pisgah National Forest





Name: Swamp Pink, Stud Flower  
(*Helonias bullata*)

Family: Lily (Liliaceae)

Flowering Period: April to May

Fruiting Period: June to July

Habitat: In montane bogs with organic muck and *Sphagnum*; in full shade, partial shade or full sunlight.

Identifying Characters: Swamp Pink is an erect evergreen perennial with stocky rhizomes. Its flowers are borne on a nearly leafless stem which is subtended by a basal rosette of leaves. These leaves are .9-2.5 decimeters (ca. .3-.8 feet) long, while the bract-like stem leaves are 1-2 centimeters (ca. 1/2-1 inch) long. The flowers are found on the end of the stem, are pink to lavender and are 5-9 millimeters (less than 1/2 inch) long and 1-2 millimeters wide. The fruit is a three-lobed capsule with 1.5-2 millimeters long with linear seeds.

County: Transylvania

District: Pisgah — Pisgah National Forest





Name: Mountain Golden-Heather  
(*Hudsonia montana*)

Family: Rockrose (Cistaceae)

Flowering Period: May to June

Fruiting Period: June to September

Habitat: Open, rocky ledges and outcrops (Quartzite) with shallow, sandy soil on high peaks and ridges.

Identifying Characters: Mountain Golden-Heather is a low, spreading, freely-branched shrub with needle-like, alternate leaves that are lost in the spring just before the new leaves appear. The leaves are 3-7 millimeters (less than .5 inch) long, spreading-ascending, at first hairy, and later becoming smooth. The solitary, yellow flowers are on stalks at the end of short leafy branchlets. The five green sepals surrounding the flower are fused at the base, creating a hairy receptacle. The five distinct (not-fused) yellow petals are almost twice as long as the sepals. Numerous stamens in the center of the flower surround the hairy ovary.

County: Burke

District: Grandfather — Pisgah National Forest





Name: Small Whorled Pogonia  
(*Isotria medeoloides*)

Family: Orchid (Orchidaceae)

Flowering Period: May

Fruiting Period: May

Habitat: Small Whorled Pogonia occurs in a variety of habitats: pine woodlands, hardwood-dominated woodlands, woodlands over limestone and in second-growth forests.

Identifying Characters: This plant is an erect, terrestrial orchid with a greenish or purple-tinged stem from 9.5 to 25 centimeters (ca. 3.8 to 10 inches) tall. The inflorescence is composed of one (rarely two) inconspicuous, tubular yellowish-green flowers, just a short distance below which is a whorl of five to six drooping, pale dusty green leaves. After flowering, the ovary expands into an erect slender, elongate capsule, which could be mistaken as a peduncle (floral stem).

County: Macon

District: Wayah — Nantahala National Forest





Name: Heller's Gayfeather  
(*Liatris helleri*)

Family: Aster (Asteraceae)

Flowering Period: July to August

Fruiting Period: September to October

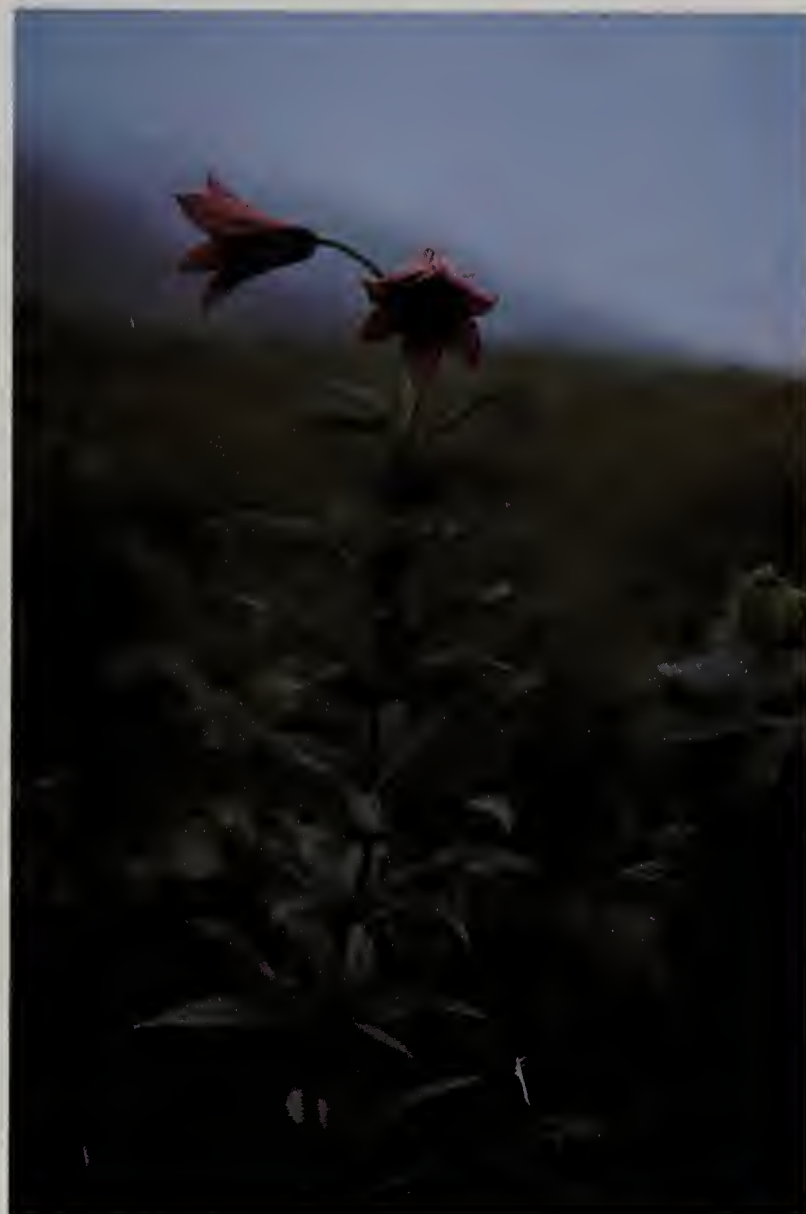
Habitat: Open, rock outcrops and rock ledges.

Identifying Characters: This plant is a perennial herb with one to several erect or arching stems from 1-5 decimeters (less than .3 to 1.7 feet) tall. Can be separated from other species of *Liatris* by the following characters: 1) the flower head is longer than broad; 2) the corolla tube is covered with soft hairs within; and 3) the pappus (the modified calyx which later develops into a special dispersal structure) is one-half or less the length of the corolla tube. All three of the above characters must be present before the plant can be determined to be *L. helleri*. This genus is very complex.

County: Burke

District: Grandfather — Pisgah National Forest





Name: Gray's Lily, Roan Lily, Bell Lily, Orange Bell Lily  
(*Lilium grayi*)

Family: Lily (Liliaceae)

Flowering Period: June to July

Fruiting Period: July to August

Habitat: Grassy balds, shrub balds (in openings) and bogs above 3000 feet.

Identifying Characters: Gray's Lily is an erect, unbranched perennial from scaly bulbs. It is up to 2 meters (ca. 6.2 feet) and has elliptic to lance-shaped leaves from 4-13 centimeters (ca. 1.5-5-4 inches) long, and from .8-2.5 centimeters (less than .5 to 1 inch) wide in whorls of 5-11 with rough margins. It is a colorful plant that can be mistaken only for other lilies. It can be separated from most *Lilium* species by the fact that it has rough leaf margins and petals and sepals without claws (tiny stems attaching the flower parts to the flower). It also has petals that are widest near the tip and bright red flowers that characterize the species.

Counties: Avery, Mitchell

District: Toecane — Pisgah National Forest

**Southern Rein-Orchid,  
Tubercled Orchis, Small Pale-Green Orchis**

**FORB**



**Name:** Southern Rein-Orchid, Tubercled Orchis, Small Pale-Green Orchis, Yellow or Greenish Orchis, Green Rein-Orchis  
(*Platanthera flava*)

**Family:** Orchid (Orchidaceae)

**Flowering Period:** June to July

**Fruiting Period:** August to September

**Habitat:** Wet meadows, alluvial woods, marshes, bogs and wet thickets. Mountain populations of Southern Rein-Orchid are found in forested and non-forested wetland habitats.

**Identifying Characters:** This orchid is an erect herb with simple leafy stems from 1.5-6 decimeters (ca. .5-2 feet) tall. When in flower the only orchid that may be mistaken for Southern Rein-Orchid is small green wood-orchid (*Habenaria clavellata*). Small green wood-orchid has fewer flowers per stem and fewer leaves (usually only one at the base of the stem) than does Southern Rein-Orchid (which has two to three leaves). When both plants are in full flower, the lip of Southern Rein-Orchid seems to be lobed or angled while that of small green wood-orchid appears unlobed.

**County:** Macon

**District:** Wayah — Nantahala National Forest





Name: Bluegrass  
(*Poa saltuensis*)

Family: Grass (Poaceae)

Flowering Period: April to May

Fruiting Period: May to July

Habitat: Open woodlands over serpentinized olivine.

Identifying Characters: An erect clumped perennial with leaves (blades) up to 10 centimeters (4 inches) long and 1-4 millimeters (less than .5 inch) wide. The flower arrangement (inflorescence) is an open triangular group of flowers 10-20 centimeters (ca. 4-8 inches) long and 4-10 centimeters (ca. 1.6-8 inches) broad with spreading or ascending rough branches. The flower spikes are two-flowered. The seed is yellowish, lance-to-oval shaped and is 1.5-2 millimeters (less than .1 inch) long.

County: Clay

District: Wayah — Nantahala National Forest





Name: Roseroot, Roan Mountain Roseroot, Snowon Rose, Rosewort, Scurvy Grass  
(*Sedum rosea*)

Family: Orpine (Crassulaceae)

Flowering Period: June to July

Fruiting Period: July to September

Habitat: Rocky cliffs and ledges at high elevations.

Identifying Characters: This is an erect, perennial, fleshy herb from 1-3 decimeters (.3-1 foot) tall. It has dense, alternate leaves without stems (petioles) 6-12 millimeters (less than .5 inch) long and 3-5 millimeters wide, with the leaves becoming smaller near the base of the stem. From short stems (1-3 decimeters), a flat-topped inflorescence with male or female (rarely both) flowers produced. The flowers have five green sepals and five petals that are yellow in the male flowers and reddish-purple in the female flowers. The fruit is 4-5 millimeters long.

County: Mitchell

District: Toecane — Pisgah National Forest





Name: Divided-Leaf Groundsel, Divided-Leaf Ragwort, Divided-Leaf Squaw-Weed, Piedmont Ragwort  
*(Senecio millefolium)*

Family: Aster (Asteraceae)

Flowering Period: April to June

Fruiting Period: May to July

Habitat: Shallow soil on rock outcrops in full sunlight or partial shade.

Identifying Characters: This is an erect, perennial herb with hollow stems 3-7 decimeters (ca. 1-2.3 feet) tall. Most of its leaves are basal and are finely divided, almost lacelike and are from 4-15 centimeters (ca. 1.8-6 inches) wide. There are usually more than 20 flower heads.

County: Macon, Jackson

District: Highlands — Nantahala National Forest



Oconee Bells, One-Flower Coltsfoot, Shortia,  
Hyams' Sparkling Shortia

FORB



Name: Oconee Bells, One-Flower Coltsfoot, Shortia, Hyams' Sparkling Shortia  
(*Shortia galacifolia*)

Family: Diapensia (Diapensiaceae)

Flowering Period: March to April

Fruiting Period: April to August

Habitat: Ravines, gorges and north-facing rich woods.

Identifying Characters: Oconee Bells is a low, evergreen perennial. Its flowers are borne on flower-bearing stems arising from the rhizomes. The flowers are white to pink, bellshaped and are 2.5 centimeters (about an inch) long. When in flower, this plant can be mistaken for no other plant. In the winter or when flowers or fruit are not present, the leaves of Oconee Bells can be confused with those of galax (*Galax aphylla*); however, the leaves of galax are much larger and have smaller teeth.

County: McDowell

District: Grandfather — Pisgah National Forest





Name: Blue Ridge Goldenrod, Skunk Goldenrod  
(*Solidago spithamea*)

Family: Aster (Asteraceae)

Flowering Period: July to August

Fruiting Period: July to August

Habitat: Exposed ledges and rocky cliffs at high elevations.

Identifying Characters: Blue Ridge Goldenrod is a short 1-3 decimeters (ca. 1/2-1 foot) tall, rhizomatous perennial with erect or arching hairy stems. Its leaves are bunched toward the base of the plant. This plant cannot be confused with plants of other genera; it, however, may be confused with several species of goldenrods. It can be most easily separated from other goldenrods by its flat-topped inflorescence, the width of its stem leaves (usually more than one centimeter), its smooth leaves (not scabrous) and the fact that upper leaves are not clasping the stem.

County: Mitchell

District: Toecane — Pisgah National Forest



## Prairie Dropseed, Northern Dropseed

## GRASS



Name: Priarie Dropseed, Northern Dropseed  
(*Sporobolus heterolepis*)

Family: Grass (Poaceae)

Flowering Period: August to September

Fruiting Period: August to September

Habitat: Pine barrens over serpentized olivine.

Identifying Characters: Prairie Dropseed is an erect, perennial growing in tufts. Its stems (culms) are 4-8 decimeters (ca. 1.3-2.7 feet) tall. It can be confused with a number of paniculate grasses (grasses bearing flowers in a triangular-shaped inflorescence). In the genus *Sporobolus*, it is separated from the other species by its open panicle, its flat blades that are 1-2 millimeters wide and its unequal basal bracts (glumes) subtending the flower.

County: Clay

District: Tusquitee — Nantahala National Forest



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## ***Sensitive Plants . . . Part Of Your National Forests***

The National Forests are managed under the multiple use system which calls for using the various forest resources in the combinations that will benefit the most people. Protecting sensitive plants is part of this management.

We need your help in locating and protecting these beauties of the forest. Please let us know if you see any of the plants described in this booklet.

Civilization sometimes takes ruthless toll of beauty as it moves forward. The world has lost much that is beautiful in the name of progress.

The responsibility of protecting the beauty that is left belongs to all of us, especially on our public lands. Let's help each other to keep natural beauty a prominent part of the National Forest System.